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ON-SCENE COORDINATOR'S REPORT

CERCLA IMMEDIATE REMOVAL PROJECT

CALUMET CONTAINER CORPORATION

HAMMOND, INDIANA

CONTRACT #68-01-6863

PAUL BITTER, ON-SCENE COORDINATOR

July 25, 1984

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## EXECUTIVE SUMMARY

The Planned Removal Action undertaken by the U.S. EPA at the abandoned Calumet Container Corporation site commenced on January 10, 1984, and was completed on February 17, 1984. The site is located in Hammond, Indiana, on 136th Street and the Indiana-Illinois state line. Approximately 90% of the property exists in Indiana and the remaining 10% is in Illinois. The site encompassed approximately 11 acres and is bounded by 136th Street and two lines of the Indiana Harbor Belt Railroad. The facility initiated its operation in the 1960s as a drum and pail reconditioner and ceased work on April 26, 1982, as a result of a fire which erupted at the site. An Immediate Removal Action was conducted by U.S. EPA subsequent to the fire at a final project cost of \$25,478. Calumet Container Corporation completed filing for bankruptcy following the fire and cessation of cleanup work at the site. The facility was inactive prior to the initiation of the Planned Removal Action described herein.

On January 2, 1984, U.S. EPA awarded the cleanup of Calumet Container to Associated Chemical and Environmental Services (ACES), a division of Fondessy Enterprises, Inc., Oregon, Ohio. The contract ceiling for the cleanup project was \$287,505 and the authorized total project ceiling was \$319,000. The costs incurred by ACES for the five week long site cleanup totaled \$284,699.68. The scope of the removal action entailed the surface cleanup of containerized liquids, solids and sludges considered as hazardous materials. The majority of the containerized materials were stored in 69 semi-trailers that were located throughout the site. ACES segregated the waste materials into 16 waste streams and bulked all liquids and compatible solids. A total of 5,000 gallons of liquids were removed from the site and incinerated at Systech Corporation in Paulding, Ohio. Previous to start-up of the cleanup operation, contaminated soils throughout the site were identified and staked out for excavation. The solids, including approximately 1,000 cu yds of soil (earthen material), sludges and solidified wastes totaled approximately 1,345 tons. These were disposed at the Fondessy landfill in Oregon, Ohio. Subsequent to soil removal, a total of 162 tons of clay were used at the site to cap and backfill areas that were excavated.

The processes leading up to and including the removal action at Calumet Container necessitated the interaction and cooperation of the following federal, city, and state agencies: U.S. EPA, Indiana State Board of Health, Indiana State's Attorney General, City of Hammond, Illinois EPA, Illinois State's Attorney General, and the City of Hammond. Under the guidelines of a Planned Removal Action, as stated in the Na-

tional Contingency Plan, funds for the Calumet Container cleanup were provided up to 90% of the project ceiling through the Comprehensive Environmental Response, Compensation and Liability Act (1980) (CERCLA). The State of Illinois was credited for the amount of money spent through its investigation of suspected contamination caused by Calumet Container. This credit was applied to the State of Indiana's cost share under contract between the state and the U.S. EPA. The State of Indiana, through a contract with the City of Hammond, provided the remaining 10% of the funds for the project. Cost recovery documentation was submitted by U.S. EPA, Region V, Remedial Response Branch, to Washington Headquarters U.S. EPA on June 29, 1984.

Proposed U.S. EPA actions at this site include the installation of ground water monitoring wells along the periphery of the site adjacent to Powderhorn Lake and between Wolf Lake and 136th Street. The wells are scheduled for installation by August of 1984 by U.S. EPA's Field Investigation Team contractor. The states of Illinois and Indiana will also conduct a water quality monitoring program involving the surrounding lakes and ground water monitoring wells in the future.

The Planned Removal Action at the Calumet Container Corporation site was successfully completed in a timely and cost-efficient manner. ACES completed the cleanup under the contract project ceiling. Very few problems were encountered through the duration of the project. Coordination between U.S. EPA, state and local agencies allowed an effective completion of the cleanup.

## 1.0 SUMMARY OF EVENTS

### 1.1 Cause of the Incident

The Calumet Container Corporation, a division of Steel Container Corporation, operated as a drum and pail reconditioner in Hammond, Indiana. The facility began its operation in the 1960s and continued until April 21, 1982, when a fire at the site forced cessation of work. The facility's daily activities included the receiving, storing, cleaning and recycling of metal containers ranging in volumes from 5-gallon pails to 55-gallon drums. Various sized fiber drums were also processed at the facility. The majority of the drums received at Calumet Container originated from paint and graphic art industries. A small incinerator was employed at the facility to burn the residual materials remaining in the drums. Prior to the fire, the facility had a lengthy history of improper disposal practices. Law suits against Calumet Container have been pursued by the states of Illinois and Indiana and the City of Hammond for air and ground water contamination and the improper disposal of hazardous materials.

As a result of the fire at Calumet Container, an Immediate Removal Action was conducted by U.S. EPA to prevent surface and air migration of hazardous substances. The Removal Action commenced on May 7, 1982, and concluded on May 21, 1982. Approximately 30 cubic yards of sludge and 5,500 gallons of contaminated liquids were removed from the site and disposed of. The total cost of the Immediate Removal Action was \$25,478.00. The Action addressed only those materials on site believed to present an immediate hazard to the environment and the nearby residents.

The processing building at the facility used to clean and recondition drums was demolished as a result of the fire. The building housed a variety of caustic materials used in the cleaning operation; several sumps located in the building were completely filled with sludge material. A total of 69 semi-trailers were located on site that housed a variety of drummed waste material, primarily paint sludges and solvents.

Following the completion of the Immediate Removal Action, the Remedial Response Branch of the U.S. EPA was informed of the site status and began an investigation for a possible Planned or Remedial Removal Action at the site.

In 1980, the State of Illinois Attorney General's Office contracted Soil Testing Services, Inc. (STS) of Northbrook, IL-

Illinois, to evaluate the extent of ground water contamination in Illinois caused by Calumet Container.

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The scope of the STS study was to determine the direction of ground water movement and the potential for contaminants to migrate into Illinois. Ground water samples were shown to contain elevated levels of organics some of which were phenolics, toluene, xylene, and heavy metals. Based on a ground water computer model, STS concluded that ground water flow was potentially moving from Calumet Container into Illinois, possibly threatening Wolf Lake.

### 1.2 Location

The Calumet Container Corporation site is located at 136th and State Line Road in Hammond, Indiana (Figure 1). Approximately 10% of the facility property was located in the State of Illinois with the remainder in the State of Indiana. The site is bounded on three sides by railroad tracks owned and operated by the Indiana Belt Harbor Railroad Company. The channel extension of Wolf Lake lies approximately 100 yards north of the site and Powderhorn Lake, a recreation and fishing area, exists approximately 50 yards directly west of the site in Illinois (Figure 1).

The Calumet Container property encompasses approximately 11 acres of which the working facility occupies 5 1/2 acres of land. It lies in a residential and industrial area along the western perimeter of Lake County, Indiana (Figure 1). A trailer park consisting of 366 house trailers and a housing subdivision containing 34 single family homes is situated less than a third of a mile from the site in Indiana. In Illinois, two trailer parks containing 660 and 75 house trailers, respectively, lie within a third of a mile of Calumet Container.

### 1.3 Situation Leading to a Planned Removal

The presently bankrupt Calumet Container facility has been inactive since the fire on April 21, 1982. The site was referred to U.S. EPA Remedial Response Branch for a possible Planned or Remedial Removal Action. In October of 1982, funds were approved by U.S. EPA for a Planned Removal Action. A site survey and inventory by Ecology and Environment, Inc., Technical Assistance Team (TAT) on April 26, 1982, indicated the presence of solid and liquid drummed material stored in 69 semi-trailers on site. The drums were believed to contain such materials as aromatic hydrocarbons, xylene, adhesives and paint waste. Surface water runoff collected and analyzed after the fire indicated the presence of cyanide, dichloro-

FIGURE 1

CALUMET CONTAINER SITE MAP  
HAMMOND, INDIANA

000008

Indiana Harbor Belt Rail Road

Illinois  
Indiana

Fill and  
Marsh  
Area

136TH STREET

Access  
Road

HAMMOND

INDIANA

Box

2501

4083

4085

2718

000

Small Tanker

Yellow Tanker

4003

REN

72

2015

3502

2080

2283

3011

3094

30

3223

4002

4067

22

Box

4049

8V2

4080

Loading Dock

Red Tanker

Box

Indiana Harbor Belt Rail Road

008

4087

400

2288

4008

005

3600

004

40102

4088

4028

3030

56

3114

002

1414

201

2888

3642

542

003

3078

2267

3078

LEGEND

000 Semi trailer and  
identification number

++++ Train track

Scale 0 200 ft

WESTERN

7-12-84





methane, dichloroethane, trichloroethane and dimethylbenzene.

Initial estimates of the quantity of waste material remaining on site following the fire were as follows:

- o 20,200 gallons of liquid in bulk storage tanks
- o 19,250 gallons of liquids in drums
- o 18 tons of solid waste in drums

State and federal officials observed the following situations upon inspection of the site: a tank trailer slowly leaking a yellowish-oily material, opened and overturned drums with evidence of spillage around them, a pool of oily liquid in the vicinity of the loading dock, an open oil retention tank, and a chemical waste trap containing a fluorescent green liquid.

After Calumet Container ceased operation, site security was nonexistent. The site was accessible along its entire perimeter and evidence of pilfering and vandalism was observed. Due to the lack of fencing or monitoring, the potential of direct human contact with hazardous materials was greatly intensified. Nearby residents had complained of foul odors emanating from the site during the warm weather months. The site was believed to present an imminent fire hazard due to the flammable nature of the liquids and sludges stored at the site.

#### 1.4 Federal Cleanup Action

##### Introduction

The Planned Removal Action undertaken by the U.S. Environmental Protection Agency (U.S. EPA) at the Calumet Container Corporation site in accordance with Section 104 (a)(1) CERCLA commenced on January 9, 1984, and was completed on February 17, 1984. The removal action entailed the surface clean-up of hazardous waste and the excavation and disposal of grossly contaminated soil. Due to the urgent nature of the situation, full competitive contracting procedures were not undertaken. Bids for the cleanup were solicited from seven contractors. At the time of the awarding of the contract, the project ceiling cost was \$277,505. The City of Hammond, through a contract with the State of Indiana, committed funds for up to 10% of the total cost of the cleanup. The State of Illinois committed its previously-accrued costs that were credited to the project.

Under the limited competition procedure, the Planned Removal Action at Calumet Container was awarded to Associated Chemi-

cal and Environment Services, Inc. (ACES), of Oregon, Ohio. The contract was awarded by U.S. EPA on January 2, 1984. Paul Bitter, U.S. EPA Remedial Response Branch, served as the On-Scene Coordinator (OSC) for the site cleanup. Richard Boice served as OSC in Mr. Bitter's absence. Mr. Doug Ballotti of the Technical Assistance Team (Roy F. Weston, Inc.) also oversaw and coordinated on-site activities.

### Scope of Work

The scope of work for the Calumet Container cleanup entailed the surface removal of hazardous waste materials contained in various sized drums and pails stored within semi-trailers and staged on the facility's loading dock. Visibly contaminated soil was to be excavated as specified by the OSC, and backfilled with clean fill material. The contractor was to be responsible for monitoring air quality throughout all phases of the cleanup, ensuring all aspects of site safety, determining compatibility of waste material, and performing all necessary sampling and analytical work for disposal.

The statement of work specified the following tasks to be completed by ACES:

- o All bulk storage containers, pails and drums are to be sampled and segregated. Oily materials are to be sampled and analyzed for PCB concentration prior to bulking. Compatibility testing will be conducted for bulking purposes.
- o All compatible liquids are to be bulked for disposal.
- o Sample all excavated material and analyze for metal and organic content.
- o Excavate and dispose of approximately one foot of visibly contaminated soil in areas specified by the OSC. Backfill with clean earthen material.
- o Drums and pails are to be compacted and properly disposed.
- o Twenty-four hour site security will be provided.
- o The "loading dock" will be dismantled and one foot of soil excavated underneath the dock. The excavated soil will be disposed of.

### Initial Cleanup Activities

ACES spent the first few days of the cleanup mobilizing the heavy equipment, the mobile laboratory, the office and decontamination trailers, and the materials and light equipment trailer. All of ACES' support trailers were staged along the access road near the northern perimeter of the site (Figure 2). ACES conducted preliminary site preparations by delineating the site perimeter with warning tape, determining air monitoring stations, and grading access roads throughout the site. A twenty-four hour security guard was placed on site to prevent access by unauthorized personnel.

The initial activity of the removal action was the staging of all the drums and pails located in the semi-trailers and about the loading dock area. A bermed staging area was constructed near the southeastern portion of the site for materials identified as liquids, oils, and semi-solids. The drums were physically removed from each trailer either by hand or by drum grapppler. The grapppler then transported each drum to a designated staging location where drums were segregated based on the physical state of the material contained in each drum. Each drum was coded and segregated in the staging area.

The solid drummed materials were staged and segregated, generally, according to the trailers from which they were moved. In the northern portion of the site, sufficient space allowed for drums to be staged directly adjacent to the trailers where they were stored. Due to the voluminous number of trailers in the southern portion of the site, drums containing solid and sludge materials were staged in several batch staging areas located near the mid-section of the site (Figure 2). Approximately 16 different staging locations existed throughout the site, each location was considered a separate waste stream.

All sampling activities and on-site compatibility testing were conducted by the ACES subcontractor Versar, Inc., of Springfield, Virginia. The Versar analytical laboratory in Virginia was contracted to perform all inorganic and PCB analysis on composite samples. Versar was also responsible for conducting daily air quality monitoring along the perimeter of the site. Twelve locations were identified along the site perimeter as monitoring stations (Figure 2). A photoionization detector (PID) was employed to monitor air quality; readings were logged three times a day at each monitoring location. Immediate weather conditions (i.e., temperature,

FIGURE 2

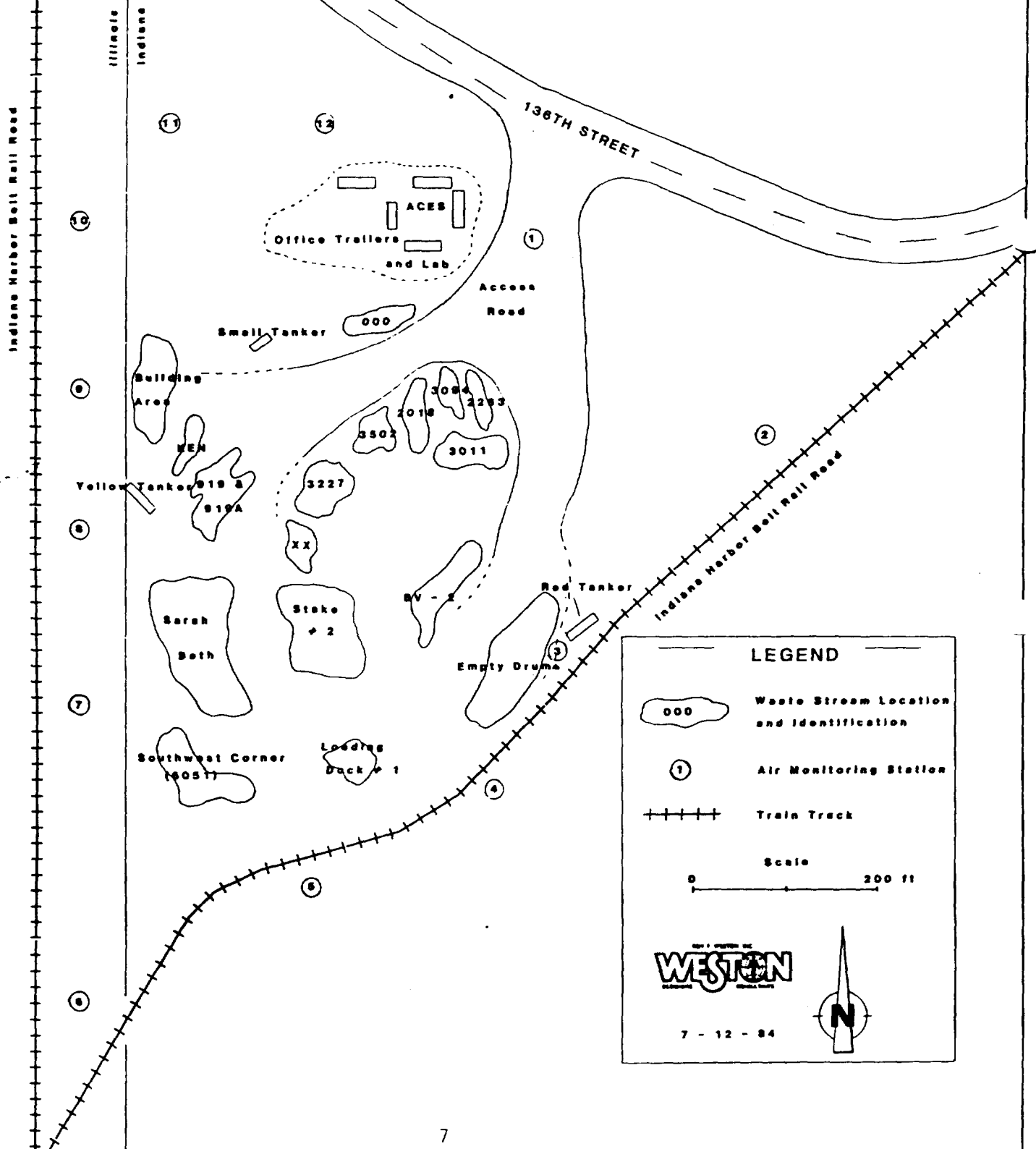
CALUMET CONTAINER SITE MAP

HAMMOND, INDIANA

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WASTE STREAM LOCATIONS

AIR MONITORING STATIONS



wind speed and direction) were also recorded three times a day (Appendix S).

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#### Waste Streams and Compatability Testing

A mobile on-site laboratory was employed by Versar for performing compatibility testing and compositing samples. Versar maintained a four-man crew on the site to conduct the sampling program. During the initial phase of the cleanup, ACES staged and opened the solid waste material drums. Prior to mobilization for cleanup, the U.S. EPA OSC solicited approval for disposal of known wastes at various landfills in the Midwest. These included facilities in Illinois, Ohio, and Indiana. The majority of the waste was slated to be disposed at Fondessy, Inc. in Oregon, Ohio; consequently, Ohio Environmental Protection Agency (OEPA) guidelines were strictly adhered to for disposal. The OEPA required that 20% of all the containers per waste stream be sampled and a composite sample be analyzed for inorganics and possibly volatile organics, depending on the flash point of the material. Twenty percent of the drums from each particular waste stream were chosen randomly and considered representative. The physical state and character of the solid drummed material was generally very similar. Many of the drums contained a characteristically black ash material or a dark granular material. Each drum from the trailers was opened and inspected for a visual characterization. The drums that were staged in the batch locations were handled in an identical manner. After completion of the staging of the drums in the batch locations, Versar sampled 20% of those drums that were representative of the batch waste stream. All the drums, regardless of their volume, and all pails were considered as individual containers to be calculated as part of the 20% requirement. Actual drum contents ranged from 55 gallons to 20 gallons in addition to a significant number of 5-gallon pails.

The waste streams in the northern portion of the site were identified by the number that was stenciled on the side of the trailer (Figure 1). These numbers were also used to identify the composite samples from each waste stream. In an effort to classify the solid waste from each trailer and minimize the amount of staging space, each waste stream was made up of drums from one or two trailers. This was, however, only done for trailers located in the northern section of the site. In the southern section, batch waste streams were made up of drums from several different trailers. Composite samples were generated for each waste stream and sent to Versar's analytical laboratory for analysis. In an effort to ensure that all waste materials could be safely bulked, eliminating the possibility of any reaction, Versar performed

compatibility testing on the samples. Versar made use of the mobil laboratory for all on-site compatibility testing. The following parameters were included in each test: flash point, reactivity for hydrogen cyanide and hydrogen sulfide, pH, and chlorine. Versar performed approximately 560 compatibility tests. Compatibility testing included qualitative analysis to determine ignitability, reactivity, and chlorine content of solid and liquid wastes. The ignitability was determined by ASTM D-93-79 method for flash point. The presence of organochlorine compounds was determined using a field qualitative copper wire test method. The flash point on the solid waste material determined whether a volatile organic analysis was required. All solid material was slated for disposal at the Fondessy landfill in Ohio, which required a volatile organic analysis on any material with a flash point of 140°F or less. Figure 3 represents the steps taken and processes involved in the compatibility testing regime. The landfill was unable by law to dispose of any material that was considered flammable (flash point <104°F). Due to a severe backlog of volatile organic analysis work, Versar laboratory was unable to accept any samples for this analysis. Because of this, all samples that required a volatile organic analysis were sent to Alert Laboratory in Canton, Ohio. No organic analysis work, however, was anticipated prior to the initiation of the cleanup. Table 1 indicates the type of analysis conducted for each composite sample.

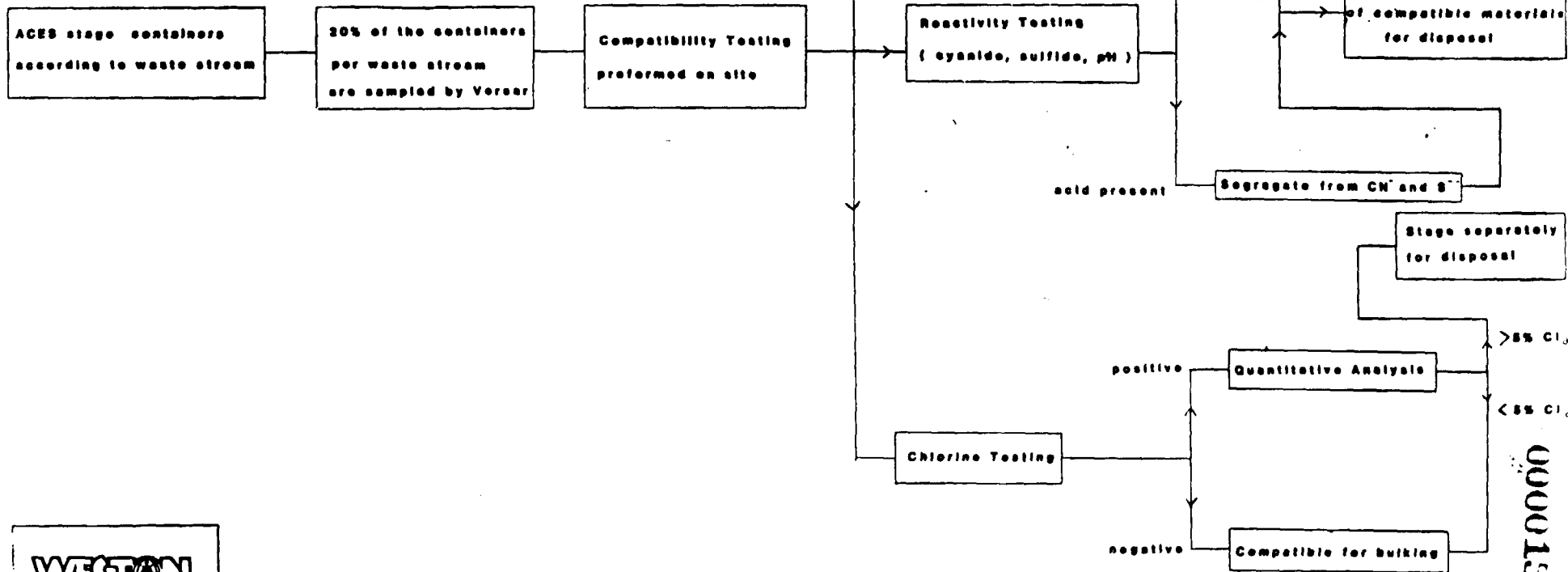
A total of 16 separate waste streams were developed on the site from which composite samples were taken (Figure 2). The composite samples were sent for off-site analysis to Versar labs in Virginia and Alert labs in Ohio. Off-site analysis of composite samples included atomic absorption (metals analysis), PCB analysis, and volatile organic analysis (GC scan). A total of eight volatile organic analyses were conducted on samples from the site. PCB analysis was conducted on the composite oil sample and the oil in the loading dock waste trap. Three samples were analyzed for BTU content as a disposal requirement for incineration.

#### Drum Sampling

Initially, the bermed staging area was intended to contain drummed material in the southern section of the site that was characterized as liquids, oils, semi-solids, and sludges. However, due to the large volume of drums in the southern section that contained sludges and semi-solid material, these materials were staged together with the solids in the batch waste stream locations (Figure 2). Two large batch staging areas were devised in the southern mid-section of the site (Figure 2) to stage the solid and semi-solid drummed material. These batch waste streams were identified as "Sarah Beth" and "Stake #2" (Figure 2). In "Stake #2," the various types of waste material were generally characterized as ink

# COMPATIBILITY TESTING FLOW CHART

FIGURE 3  
CALUMET CONTAINER  
HAMMOND, INDIANA



**WESTON**  
DE MOORE  
CONSULTANTS

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TABLE 1

**CALUMET CONTAINER CLEANUP  
SAMPLE LOCATION AND ANALYSIS**

<u>Sample Location</u>		<u># of Drums</u>	<u>Drums Sampled</u>	<u>Flash Point</u>	<u>Analysis</u>	<u>Physical State</u>
1)	Front half of trailer 000	75	11	230°F	Metals	Solid
2)	Rear half of trailer 000	100	13	230°F	Metals	Solid
3)	Trailer 2263	88	17	157°F	Metals	Solid
4)	Trailer 3094	70	14	230°F	Metals	Solid
5)	Trailer 3011	75	17	230°F	Metals	Semi-solid
6)	Trailer BV2	103	19	125°F	Metals/organics	Semi-solid
7)	Trailer 3227	158	32	230°F	Metals	Semi-solid
8)	Trailer 2018	61	12	130°F	Metals/organics	Semi-solid
9)	Trailer KEN	137	24	155°F	Metals	Solid
10)	Trailer XX	174	30	230°F	Metals	Solid
11)	Loading Dock 1	82	12	230°F	Metals	Solid
12)	Trailer 919	195	36	230°F	Metals	Solid
13)	Stake #2	364	42	146°F	Metals	Solid/Semi-solid
14)	Sarah Beth	355	54	152°F	Metals	Solid
15)	Load.Dock Comp. (Soil Sample)			150°F	Metals	Solid
16)	Load.Dock Soil @ 1' depth (Soil Composite)			141°F	Metals/organic	Solid
17A)	Load.Dock Bin (Comp.Sampl.Mater.)			123°F	PCB	Liquid
17)	Load.Dock Tank (No Off-Site Analy.Done)			144°F		Liquid
18)	Trailer 6057	215	42	107°F	Metals/organic	Solid
19)	Yellow Tank Trailer			133°F	Organics/BTU	Liquid/Sludges
20)	Trailer 6057 Puddle			134°F	Organic	Liquid
21)	Burned-out Area near Center of Site			135°F	Metals/organics	Semi-solid
22)	Composite Oils	124	124	75°F	PCB/BTU	Liquid
23)	Excavated Load.Dock (Soil-Comp.Soil.Samp.)			205°F	Metals/organics	Solid
24)	Center Pile Soil Sample				Metals	Solid
25)	Red Tank Trailer-Less than 200 gal total			142°F	Metals/organics	Liquid
26)	Composited Liquids (Chlorinated)	145	145	70°F	BTU	Liquid
27)	Composited Liquids (Nonchlorinated)	145	145	70°F	BTU	Liquid

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sludge, black tar and semi-solids. The "Sarah Beth" location was composed of drummed material described as dry grey sludge, purple and black sludge, and dry black conglomerate. A total of 41 samples were taken from the "Stake #2" waste stream and 54 samples were taken from the "Sarah Beth" waste stream. Table 1 indicates the total number of drums sampled from each waste stream. The Versar sampling crew retrieved representative samples of the various dissimilar drummed materials from each batch waste stream. Compatibility tests were performed on each sample and a composite sample was produced per batch waste stream.

#### Soil Removal and Loading Dock Dismantlement

Prior to project startup, TAT member Doug Ballotti and OSC Paul Bitter inspected the areas within the site that would require soil excavation. These locations were identified with metal stakes and flags. The areas projected for excavation were determined by the amount and extent of visibly contaminated soil. As the soils were excavated, ACES stockpiled the contaminated soil near the center of the site for eventual disposal. ACES employed the use of a front-end loader crawler with a 4.5 cu yd bucket to perform the excavation. After all the contaminated soil was stockpiled, Versar retrieved soil samples from random points within the pile. Compatibility tests were performed on the samples and a representative composite was drawn.

Subsequent to the removal and restaging of drums located on the main loading dock, the dock was completely dismantled by ACES. The loading dock was located adjacent to the northern perimeter of the Calumet Container process building that was demolished as a result of the fire in April 1982. The dismantling of the loading dock was completed as directed by the statement of work in the contract. Due to the heavily contaminated condition of the dock, complete removal was necessary. Approximately two feet of soil underneath the dock were excavated due to heavy contamination. An acetylene torch was required to cut the iron struts that supported the metal grating of the dock. The torch expedited the final removal of the dock. Samples of the contaminated soils underneath the dock were taken at various points. The samples were composited and sent out for analysis. As the soils were excavated, ACES stockpiled the soils in a location just north of the dock and retrieved additional samples for analysis. After the loading dock soils were excavated, the Versar sampling crew pulled soil samples at the one foot excavation level in an effort to determine the extent of contamination. After the analytical work was completed on the loading dock

soil samples, the dock area was completely backfilled and capped with clay to prevent infiltration. The majority of the clay brought to the site was obtained from the Fondessy landfill in Oregon, Ohio. It was inspected by the TAT and the OSC for its compaction and percent sand and gravel material. TAT was informed by Fondessy that the clay had been tested and determined to have a permeability rate of  $10^{-7}$  cm/sec. The clay was referred to as "blue clay" and was indigenous to the region of northern Ohio. The clay was spread and compacted on the site by a front-end loader.

Versar also sampled the waste trap that was adjacent to the loading dock. The trap contained mostly oil and frozen liquid. The oil fraction of the trap was sampled and sent out for analysis. The large yellow tank truck that was located along the western perimeter in the northern portion of the site (Figure 1) was sampled for the sludge fraction at the bottom of the tank. The sludge sample was analyzed for volatile organics only. The liquid phase in the tank had been sampled during a previous site investigation by the TAT (Appendix II). A small hole on the side of the yellow tanker was found leaking at the time of the cleanup when the weather became warmer. ACES patched the hole in the tank with a caulking material. A small puddle of oily material accumulated underneath the tank as a result of the leak. The majority of the material in the tank was, however, frozen and could not be removed. Based on the analysis of the material, the City of Hammond agreed to allow the material to be disposed in the city sewer system. This, however, would not be completed until sometime in the spring or summer when the material had completely thawed. The other tanker on site that contained material was the red tank trailer located on the eastern perimeter of the site near the empty drum pile (Figure 2). The tank contained approximately 200 gallons of liquids with a thin ice sheet cover. Versar sampled the liquid and sent it out for metal and volatile organic analysis. After the analysis was completed, the material was bulked with the other liquids on the site.

#### Liquid and Solid Material Bulking

All drums that contained liquids were sampled and put through the series of compatibility tests. Two 5,000-gallon tankers were brought on site for the bulking of liquids; one tanker was used for the chlorinated liquids and the other for the nonchlorinated liquids. A 3,500 gallon vacuum tanker was used to transfer the liquids from the drums to the tankers. The chlorinated and nonchlorinated liquids were segregated due to the limited allowable concentration of percent total chlorine permitted for incineration. All oils and liquids on

site were slated to be incinerated at Systech, Inc., in Paulding, Ohio. Systech has a 5% total chlorine maximum for materials burned in its incinerator. If the total chlorine percentage of the chlorinated material exceeded the maximum level, the liquids would have had to be disposed elsewhere. Versar retrieved samples of the bulked liquids directly from each tanker. The samples were sent out for analysis for BTU content, volatile organic and total percent chlorine. The oils were bulked separately in the vacuum truck due to the possibility of PCB contamination. The liquids and the oils were found to contain permissible levels of chlorine and nondetectable levels of PCB. The chlorinated and the non-chlorinated liquids and the oils were all bulked together in a single tanker for transfer to Systech. The tanker was leased from Mid-America Environmental Services in Riverdale, Illinois. It was found that Mid-America was the only local hauling company permitted to transport hazardous waste liquid into Ohio. Systech charged \$.35 per gallon for incineration of waste; a total of 5,000 gallons of liquids and oils were sent to Systech at a total disposal cost of \$1,750. Pre-cleanup estimates of volume of liquids on site were as great as 20,000 gallons; the actual amount of liquids on site was approximately 10,000 gallons.

The sludges and semi-solids on site were solidified using cement kiln dust as the solidifying agent. The lids to the drums were completely removed using a drum opener and all standing liquids were vacuumed off. The drums were emptied into a water-tight secured roll-off box using the drum grapple. The sludges and semi-solids were mixed at a 2:1 ratio with the cement kiln dust in the roll-off box. A backhoe was employed to thoroughly mix the materials together to promote the sludges and semi-solids to set up. Cement kiln dust was specifically used due to its good absorbtive capacity and low propensity to react with acid material. The solidified material was loaded into lined dump trucks via the front-end loader. The material was transported to the Fondessy landfill for disposal. Jack Grey Trucking and Fondessy Inc., provided a total of nine trucks for transportation to the Fondessy landfill.

The empty drums were stockpiled along the southeastern perimeter of the site (Figure 2). An automatic compactor was used to crush the empty drums. The crushed drums were classified as hazardous material and disposed at the Fondessy landfill.

The drummed solid materials were compacted using the tracks of the front-end loader crawler. The majority of the drums were crushed at their staging location. The track on the front-end loader effectively crushed the drums and their contents without having to empty each drum. The drums and their contents were loaded onto lined dump trucks using the bucket of the front-end loader and transported to the Fondessy landfill. A total of 1,345 tons of crushed drums, solid waste material and contaminated soil were removed from Calumet Container and disposed. All this material was disposed at the Fondessy landfill in Oregon, Ohio, at a \$60 per ton (transportation included) cost. The final disposal cost at the Fondessy landfill was \$38,736.58.

The majority of the trailers located in the mid-section of the site were staged in the far northern section of the site and along the eastern perimeter following the drum off-loading. Each trailer on the site was inspected to determine whether it was necessary to scrape the floors due to extensive contamination. Using shovels and picks, ACES scraped the floors of the most highly contaminated trailers. The OSC and TAT were responsible for inspecting the trailers and determining which ones were to be scraped.

#### Capping and Grading

A total of 162 tons of clay were stockpiled on the site. The clay was used to cap areas of the site where soil was excavated. Soils underneath the loading dock and visibly stained soils throughout the site were excavated. At the time when ACES was emplacing the cap and attempting to grade the site, the continual rainfall made the activity quite difficult. The site became very muddy and the heavy equipment was ineffective in the wet terrain. The site was graded as well as possible by a front-end loader and the cap was placed. The OSC contacted the owner and recommended the owner finish grading the surface of the site during the summer.

#### Site Completion and Cost Breakdown

The last several days of the project were spent loading lined dump trucks with the solid and solidified waste material. The dump trucks were also involved in off-loading a total of 162 tons of clay to cap selected areas of the site. On Thursday, February 16, 1984, the last truck loads of waste material were removed from the site. By this phase of the clean-up, the weather had changed considerably; the temperature was 40°F and rainy conditions persisted. Mobility on the site became difficult and the wet and muddy condition created a

difficult situation for grading of the site and backfilling the clay.

Friday, February 17, 1984, was the final day of the project on site. ACES completed the decontamination of its equipment and completely demobilized all its heavy equipment and the various office trailers. Several of the Calumet Container semi-trailers from the site were placed as barracades in front of the site access road to prevent entrance into the site once the cleanup was completed.

Tables 2 and 3 provide an itemized cost breakdown of all costs incurred relative to the Calumet Container site cleanup. The tables include costs for contractor personnel, equipment, disposal and TAT and U.S. EPA personnel.

### 1.5 Community Relations

Prior to the initiation of the site cleanup at Calumet Container, U.S. EPA provided a news release to the media indicating the general status of site and the proposed actions to be completed. On January 12, 1984, the Mayor of Hammond, representatives of the City Council and agencies, and local media representatives were invited to visit the Calumet Container site. U.S. EPA Public Affairs official, Robert Hartman, and OSCs, Paul Bitter and Richard Boice, were on site to conduct a tour of Calumet Container and respond to Container's questions regarding the cleanup. Media representatives from Chicago, Hammond, and Gary were present at the site for the tour. Throughout the duration of the cleanup, media representatives were welcome to visit the site for status reports and video taping from the perimeter. Several local news agencies visited the site on separate occasions for progress reports.

Mr. Ron Novak, City of Hammond official, disseminated public information regarding the site cleanup progress. The OSC informed Mr. Novak of the continuing site activity on a daily basis. The two trailer parks in the vicinity of Calumet Container were informed of the cleanup activity prior to start-up.

## 2.0 EFFECTIVENESS OF REMOVAL ACTION

### 2.1 Responsible Parties

The Steel Container Corporation, also known as Calumet Container Corporation, was owned and operated by Mr. John Jagiella. In July of 1981, Mr. Jagiella filed for bankruptcy under Chapter 11 in the Federal Bankruptcy Court. After the

TABLE 2

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CALUMET CONTAINER CORPORATION  
CLEANUP COST ITEMIZATION

1. Contractor Costs

Associated Chemical and Environmental Services (ACES)  
Oregon, Ohio

Personnel	\$ 69,093.13
Equipment	78,517.67
Materials	12,491.00
Subtotal	\$160,101.80

2. Subcontractor's Cost

## A. Versar, Inc., Springfield, Virginia

Air Monitoring	\$ 10,458.00
Compatibility Testing	50,919.18
Solid Material Sampling	2,127.60
Liquid Material Sampling	707.52
Metals Analysis	2,310.00
PCB Analysis	165.00

## B. Alert Laboratory, Canton, Ohio

Volatile Organic Analysis	1,417.50
BTU	138.00

C. Pinkerton's  
Guard Service

9,266.00

D. Service Sanitation, Inc.  
Port-a-john

60.00

E. Witham Co., and Peoples, Inc.  
Diesel Fuel

1,262.38

F. Hammond Department of Water Works  
1,000 gallons of water

20.94

G. Kiel Chemical Co.  
Truck Scale

255.00

## H. Fondessy Enterprises, Oregon, Ohio

Waste Disposal	38,736.58
Clay Backfill	1,050.00

TABLE 2 (Continued)

I.	Al's Sand Pit Backfill Material	\$ 32.10
J.	Meade Electric Co. Electrical Hookup	1,546.59
K.	Chicago Bulk Transport Co. Two bulk tankers	690.00
L.	Northern Indiana Public and Service Co. (NIPSCO)	
	Electrical Hookup	568.00
	Electric Usage	835.00
M.	Indiana Bell Telephone Co. Phone Usage	532.68
N.	Systech, Inc., Paulding, Ohio Liquid Incineration	1,500.00
	Subtotal	\$124,597.96

TABLE 3

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CALUMET CONTAINER CORPORATION  
PROJECT COST SUMMARY

## 1. Extramural Cost - Site Cleanup

ACES and Subcontractor Costs \$284,699.76

## 2. Intramural Costs

A. U.S. EPA \$ \_\_\_\_\_ \*

B. Technical Assistance Team  
Roy F. Weston, Inc.  
(Estimated Through 7-20-84)12,500.00

Total Cost \$ \_\_\_\_\_

\*To be provided by U.S. EPA.



April 21, 1982, fire had been extinguished, U.S. EPA notified Mr. Jagiella and requested that he voluntarily undertake certain response actions to mitigate the threat of further releases of hazardous substances to the environment. Mr. Jagiella did not undertake any of those actions; consequently, an Immediate Removal Action was initiated by U.S. EPA in conformance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA).

#### Responsible Party Response Relative to the Planned Removal

On June 2, 1983, notice letters were sent by the U.S. EPA Region V Waste Management Division to the owner and a list of potentially responsible parties (PRP). A total of 31 letters were transmitted. From June through August 1983, U.S. EPA met with the owner and on separate occasions, some of the PRP.

On August 18, 1983, the owner's lawyer requested that U.S. EPA consider a proposal for cleanup of the site by the owner. From August until November 1983, the owner and his assistants tried to form a committee of PRP to finance a cleanup of the site. In December, sufficient response was not received by the owner from the PRP to finance a cleanup, present a plan for cleanup, health and safety of workers and otherwise meet the requirements presented by U.S. EPA in correspondence to the owner and his assistants. U.S. EPA had pursued the administrative requirements to implement a planned removal concurrent with the owner's efforts to formulate a PRP committee to privately clean up the site. Thus, in January 1984, after the owner was not able to present a viable plan for the site, U.S. EPA concluded contracting discussions with Associated Chemical and Environmental Services (ACES) and mobilized equipment on the site on January 10, 1984.

In the past, Mr. Jagiella has been ordered by the Stream Pollution Control Board of the State of Indiana to clean up spilled residues throughout the site. The State of Indiana initiated a series of site inspections beginning in 1978 that resulted in a Final Order being issued to Calumet Container on April 15, 1980. In response to the state's action, Mr. Jagiella requested and filed for a judicial review of the board's order. On September 10, 1981, the Circuit Court of Jasper County upheld the final order issued by Stream Pollution Control Board. The Calumet Container facility was subsequently inspected by state officials and several violations of the final order were observed. The State Attorney General's Office filed for an enforcement action against Calumet Container on April 16, 1982, in the Circuit Court of Lake County, Indiana. On April 21, 1982, a disastrous fire struck the facility causing a permanent cessation of the operation.

In May of 1982, the State of Indiana Environment Management Board submitted the Calumet Container site to the Interim National Priority List for hazardous waste site cleanup as established by CERCLA.

## 2.2 State and Local Forces

The Indiana State Board of Health (ISBH) conducted the site inspections of Calumet Container and provided U.S. EPA with inorganic analysis data as a part of their water quality monitoring program leading to the site cleanup. Chris Oppy, ISBH investigator, coordinated the state's action pertinent to the contract between Indiana and U.S. EPA (Appendix JJ). Assistance was provided to the OSC throughout the cleanup by Ronald Novak of the Hammond Air Pollution Control Department. Mr. Novak also assisted EPA Public Affairs official, Robert Hartian during the initial site tour for the media.

## 2.3 Federal Agencies

Throughout the cleanup at Calumet Container, U.S. EPA Technical Assistance Team (TAT) contractor Roy F. Weston, Inc., monitored the progress of the response action and performed cost control functions to verify and document cleanup costs. The TAT was responsible for entries into site equipment logs, the daily CERCLA summary, daily work orders, and the daily narrative log for on-site activities. TAT monitored all daily costs incurred by the contractors; the 1900-55 contractor cost report forms, were completed daily by ACES and reviewed for the OSC by the TAT. The incident obligation log was updated daily by the TAT and the OSC was briefed on daily incurred costs and the ceiling balance. TAT member Doug Ballotti was on site at all times during cleanup-related activities and assisted the OSC whenever necessary.

Near the completion of the cleanup, the TAT was tasked by the OSC to take two soil samples, one under trailer #6057 and the other from the loading dock soil pile. These samples were sent through the U.S. EPA National Contract Laboratory Program for analysis. The samples were analyzed for Tasks 1 and 2 metals including cyanide.

Paul Bitter, U.S. EPA Remedial Response Section, was assigned the On-Scene Coordinator (OSC) for the Calumet Container cleanup. Richard Boice, U.S. EPA Remedial Response Section, was Acting OSC in Mr. Bitter's absence. Mr. Bitter and Mr. Boice were involved in supervising the entire range of the project and provided direction to the cleanup contractors as the project progressed. The OSCs were instrumental in clarifying

fying and interpreting the certain sections within the contract between ACES and U.S. EPA. Of particular concern was the fixed rate section in the contract which indicated the unit cost for the sampling tasks. ACES Project Manager, Donald Styer, was unsure about how to appropriately charge for sample analysis and on-site sampling of liquids and solids. The matter was resolved with the assistance of Patrick Flynn, Washington EPA Contracting Officer, in discussion with OSC Bitter and Larry Imely, ACES Contract Manager.

Four modifications in the original contract were requested by OSC Bitter to reflect additions in the scope of work and clarification of the language of the contract. OSC Bitter requested that overtime be allowed by ACES in an effort to avoid extreme weather conditions that threatened timely completion of the project. Frigid weather, less than -20°F and wind chill factors of less than -50°F affected labor productivity. Thus, during warmer weather, above 15°F, overtime was requested to expedite the completion of the cleanup, and lower the overall cost of the project. ACES was authorized to perform overtime to the extent that the premium would not exceed \$984.00. The period of performance for completion of the project was extended from February 9, 1984, to February 17, 1984, due to delays caused by extreme cold weather conditions and the electric utility company (NIPSO) not extending a power line to the ACES office trailer in a timely manner. Due to the significantly increased number of compatibility tests required on the waste material, OSC Bitter requested an increase in the ceiling from \$277,505 to \$287,505. The original number of compatibility tests was increased from 350 to 560 tests to be performed. This was due to the unexpectedly large number of small drums and pails that were to be treated as individual containers. All containers had to be considered when determining the 20% number of drums for sampling per waste stream.

Based on observations made by OSC Bitter and TAT member Ballotti, the decision was made to selectively cap certain areas within the site that were grossly contaminated. The contract was modified to state that backfill material used on the site was changed from earth to clay. The clay was obtained from three different sources and inspected by OSC Bitter and TAT member Ballotti. A total of nine truck loads of clay were brought into the site for capping purposes. The area of the loading dock and the bermed staging location were capped as directed by the OSC and TAT. The clay was placed to prevent infiltration and promote runoff from areas where residual sludges still existed in the subterrain.

## 2.4 Contractors

Associated Chemical and Environmental Services (ACES) of Oregon, Ohio, was awarded the contract for the hazardous waste removal activities at Calumet Container. ACES is a division of Fondessy Enterprises, Incorporated, which owns and operates a hazardous waste landfill under the same name. All the solid waste generated from Calumet Container, as stipulated in the contract, was slated for disposal at the Fondessy landfill in Oregon, Ohio. ACES procured the services of Versar, Incorporated, of Springfield, Virginia, as the subcontractor to provide limited on-site analysis, conduct perimeter air monitoring and complete all necessary sampling tasks. Inorganic and PCB analysis was conducted by the Versar laboratory in Virginia; all volatile organic analysis was conducted by Alert Labs in Canton, Ohio. All liquids on the site were disposed at the Systech Corporation in Paulding, Ohio. The liquids were incinerated at Systech for \$.35/gallon of waste. A total of 5,000 gallons of chlorinated and nonchlorinated liquids and oil were sent in one tanker to Systech and incinerated at a total cost of \$1,750.

As the prime contractor in the Calumet Container cleanup, ACES performed its tasks proficiently. The field crew personnel operated very efficiently throughout all phases of the project. During the cold weather spells when working conditions were very difficult, the ACES field crew maintained a quality level of work effort. Don Styer, ACES project manager, worked diligently to prevent any cost overruns during the project and was receptive to all OSC direction.

Versar maintained a high level of work quality during all aspects of material sampling and compatibility testing. The sampling crew worked quite well during the adverse weather conditions. Analysis from the Versar laboratory in Virginia was received in a timely manner and helped maintain the overall quality and consistency of the project.

## 3.0 PROBLEMS ENCOUNTERED

Relatively few problems were encountered during the Planned Removal Action at the Calumet Container site. The cleanup took place during the winter months of January and February which created some problems due to the extreme variation of weather. The project was originally scheduled to be completed within a four-week period; however, in part, due to the cold weather conditions, the project was extended by a week. Several days during the project the wind chill temperature

reached -40°F or less. This caused an increased amount of equipment failure and created severe working conditions. The contractors worked diligently in the adverse weather conditions; however, delays were inevitable.

Fear of exposure and frostbite forced the contractors to take more frequent and longer breaks. The cold weather also created a difficult sampling environment. The Versar sampling crew found most of the drummed material frozen; it became very difficult to retrieve a representative sample of the liquids, which were frozen solid. Toward the end of the cleanup, the weather warmed slightly causing most of the frozen liquids to thaw. This also created a handling problem when these materials were staged and bulked as solids. ACES was forced into solidifying many liquid materials that were originally believed to be solids. During the last several days of the project, the ambient temperature rose above freezing (32°F) and created very muddy conditions on the site. It was very difficult to grade the site due to the heavy equipment sinking into the terrain; emplacing the clay cap also became a difficult task.

Delays were also caused by the Northern Indiana Public Service Company (NIPSCO) not expediting the installation of the power line to the site. ACES was forced into using its portable power generator to operate the mobile lab instead of the drum compactor, as was originally intended. This delayed the drum crushing activity until the portable generator was available for operation. After approximately two weeks from the initial request, NIPSCO installed the power line to the site. The line was used to supply electrical power to the mobile lab, the decontamination trailer and the office trailer. Despite the delays, the project was completed within five weeks and within budget.

#### 4.0 RECOMMENDATIONS FOR FURTHER ACTIONS

As of February 17, 1984, the site was secured and access to the site was blocked by trailers. The owner was contacted and the OSC suggested that a gate be constructed at the site's entrance to limit access. The OSC also explained that the site would become a junk yard if access were not limited. Furthermore, the owner agreed to dismantle the remaining trailers and salvage the iron for its monetary value. The OSC, through conversations with Ron Novak of the City of Hammond, conveyed to the owner the city's concern that the site remain closed to the public and the trailers and junk iron be removed. As of May 1983, the owner had initiated removal of some of the scrap iron remaining on the site.

The OSC requested the Field Investigation Team (FIT) to install some monitoring walls at the periphery of the site for future monitoring purposes. This is scheduled for August 1984.

Regarding the site itself, the OSC recommended that the owner remove the remaining scrap iron for its salvage value, grade the area around the old facility, and work with the City of Hammond to restore use of the land.

The cleanup went smoothly due to: 1) receipt of U.S. EPA RCRA approval for disposal at a number of potential facilities prior to mobilization; 2) close coordination between the OSC and U.S. EPA contracts officer in headquarters which allowed rapid resolution of contract questions, and rapid processing of four contract amendments generated by the OSC while on site; 3) close coordination between TAT and the OSC; and, 4) a concise scope of work for the contractor based on historical knowledge of the site and site investigation prior to soliciting bids. The OSC recommends that the above processes be considered in future removals.